

SPEAR ET AL.  
"Timing Advance Determinations In Wireless  
Communications Devices And Methods"  
Atty. Docket No. CS23169RA

Appl. No. 10/645,568  
Confirm. No. 7858  
Examiner H. Foud  
Art Unit 2616

## REMARKS

### Request for Reconsideration, Claims Pending

The non-final Office action mailed on 30 April 2007 has been considered carefully. Reconsideration of the claimed invention in view of the amendments above and the discussion below is respectfully requested.

The Claims have been amended grammatically and idiomatically as suggested by the Examiner. No new matter has been added.

Claims 18 and 19 were indicated as being allowable.

Claims 1-11 and 13-23 are pending.

### Response to Rejections Under 35 U.S.C. 112

#### Rejection Summary

Claims 18 and 19 stand rejected under 35 USC 112, second paragraph for lack of antecedent basis.

Claim 18 was amended to provide an antecedent basis for the term "source". Thus the objections to Claims 18 and 19 have been over come. Kindly withdraw the rejection.

Arguments re: Nam & Carlsson

Rejection Summary

Claims 1-8 stand rejected under 35 USC 103(a) as being unpatentable over GB 2383215 (Nam) in view of US 6603978 (Carlsson).

Discussion of Claim 1

Regarding Claim 1, Nam and Carlsson fail to disclose or suggest a

... method in a wireless communications device, the method comprising:

determining a distance of the wireless communications device from a base station;

determining timing advance, at the wireless communications device, for the base station based on the distance of the wireless communications device from the base station;

using the timing advance determined for transmitting to the base station.

Contrary to the Examiner's assertion, there is no suggestion or motivation in Nam and Carlsson to combine said references in a manner that would render the claimed subject matter obvious. At page 10, line 20 – page 11, line 4, Nam discloses a base station that determines timing advance (TA) for a mobile station based on the position of an access burst from the mobile station in a timeslot on a random access channel (RACH).

The Examiner concedes that Nam fails to disclose determining the TA at the mobile station. There is no need in the disclosure of either Nam or Carlsson for the mobile station to compute timing advance. Nam computes

the TA at the base station. The passages of Carlsson cited by the Examiner do not provide any motivation or suggestion for the combination asserted. At col. 4, lines 23-25, Carlsson merely discusses the use of location measurement units (LMUs) in a wireless communication system for the purpose of measuring the timing relationship between GPS time and the wireless communication system. At col. 4, lines 49-53, Carlsson discusses the use of a GPS receiver in a mobile station for the purpose of determining the location of the mobile station. Carlsson's teaching of the ability of the mobile station to compute its location or the synchronization of the network with GPS time has no bearing on TA. Claim 1 is thus patentably distinguished over Nam and Carlsson.

### Discussion of Claim 2

Regarding Claim 2, Nam and Carlsson fail to disclose or suggest in combination with Claim 1,

... determining a location of the wireless communications device,  
determining the distance of the wireless communications device  
from the base station using the location of the wireless communications  
device and a location of the base station.

The Examiner's reliance on the step at box 68 of Nam to suggest the limitations of Claim 2 is misplaced. At box, 68, Nam discloses calculating the distance from the mobile terminal to each base station using the timing advance provided by the network. In Claim 2, the wireless device determines the distance to the base station as a basis for computing the TA. Claim 2 is thus further patentably distinguished over Nam and Carlsson.

Discussion of Claim 4

Regarding Claim 4, Nam and Carlsson fail to disclose or suggest in combination with Claim 2,

... obtaining the location of the base station based on known timing advance information for different locations with a cell served by the base station.

The Examiner's reliance on the step at box 72 of Nam to suggest the limitations of Claim 4 is also misplaced. At box, 72, Nam discloses converting position information to the geographical location of the terminal for displaying on the terminal. Contrary to the Examiner's suggestion there is no disclosure in Nam for obtaining the location of the base station based on timing advance information. Nam discloses determining the distance between the base and mobile stations (not the location of the base station) based on the TA provided by the base station.

In Claim 4, the wireless device determines the locations of the base station and the mobile station to determine the intervening distance, which is the basis for computing the TA. Nam does not require the location of the base station to determine the distance between the base station and the mobile station, since Nam determines this distance using the TA. Claim 4 is thus further patentably distinguished over Nam and Carlsson.

Discussion of Claim 5

Regarding Claim 5, Nam and Carlsson fail to disclose or suggest in combination with Claim 2,

... obtaining the location of the base station based on receiving a message including base station location information.

At page 15, lines 7-10, Nam discloses receiving bases station location information in a message for the purpose of determining the location of the mobile station, as discusses at page 15, line 21 – page 16, line 6. Claim 5 is thus further patentably distinguished over Nam and Carlsson.

#### Discussion of Claim 6

Regarding Claim 6, Nam and Carlsson fail to disclose or suggest in combination with Claim 2,

... obtaining the location of the base station from a table of base station locations stored on the wireless communications device.

At page 15, line 21 – page 6, line 6, Nam discusses receiving bases station location information from the network operator or by means of a survey for the purpose of determining the location of the mobile station. Claim 6 is thus further patentably distinguished over Nam and Carlsson.

#### Arguments re: Scott & Carlsson

#### Rejection Summary

Claim 11 stands rejected under 35 USC 103(a) as being unpatentable over US 6388997 (Scott) in view of US 6603978 (Carlsson).

Discussion of Claim 10

Claim 10 has been amended to include the limitations of Claim 11. Scott and Carlsson fail to disclose a

... method in a wireless communications device, the method comprising:

obtaining satellite positioning system time from a satellite positioning system, obtaining satellite positioning system time from the base station;

determining a propagation delay between the wireless communications device and a base station, the propagation delay determined using the satellite positioning system time from the satellite positioning system and the satellite positioning system time from the base station;

determining timing advance, in the wireless communications device, for the base station based on the propagation delay between the wireless communications device and the base station;

using the timing advance determined for transmitting to the base station.

The Examiner concedes that Scott fails to disclose the limitations of Claim 11 and cites Carlsson to meet the deficiency. The Examiner's reliance on Carlsson however is misplaced. At col. 4, lines 23-25, Carlsson merely discusses the use of location measurement units (LMUs) in a wireless communication system for the purpose of measuring the timing relationship between GPS time and the wireless communication system. The comparison of GPS time to channels in Carlsson however suggest nothing about determining a propagation delay between the mobile station and the base station. Amended Claim 10 is thus patentably distinguished over Nam and Carlsson.

Arguments re: Chen

Rejection Summary

Claims 12-17 and 20 stand rejected under 35 USC 102(e) for anticipation by US 2003/0139188 (Chen).

Discussion of Claim 12

Regarding Claim 12, Chen fails to disclose a

... method in a wireless communications device, the method comprising:

obtaining first timing information for the wireless communications device at a first known location relative to a base station;

obtaining second timing information for the wireless communications device at a second known location relative to the base station;

determining a location of the base station based on the first and second timing information and based on the first and second known locations.

The various passages of Chen referenced by the Examiner do not support the asserted rejection of Claim 12. At paragraph [0025], Chen discloses approximating a distance of a mobile station from a base station based on a difference between upper and lower bounds on a propagation delay. Chen does not obtain timing information for the same wireless communication device at different known locations relative to the base station and then determine the location of the base station based on the timing information and the known locations. Claim 12 is thus patentably distinguished over Chen.

Discussion of Claim 13

Regarding Claim 13, Chen fails to disclose a

... method in wireless communications device, the method comprising:

determining a difference between a current cell timing and a prior cell timing for a common serving cell;

determining a current timing advance for the common serving cell using the difference between the current cell timing and the prior cell timing and using a prior timing advance corresponding to the prior cell timing.

The various passages of Chen referenced by the Examiner do not support the asserted rejection of Claim 13. At paragraph [0025], Chen discloses approximating a distance of a mobile station from a base station based on a difference between upper and lower bounds on a propagation delay. Chen does not determine a difference between prior and current cell timing for the same serving cell, or determine TA based on the difference the a prior TA corresponding to the prior cell timing. Claim 13 is thus patentably distinguished over Chen.

Discussion of Claim 15

Regarding Claim 15, Chen fails to disclose a

... method in a wireless communications device having a look-up table providing timing advance information associated with different locations relative to at least one base station, the method comprising:

determining a location of the wireless communications device;

determining timing advance information for the location of the wireless communication device from the look-up table.

The various passages of Chen referenced by the Examiner do not support the asserted rejection of Claim 15. At paragraph [0024], Chen discloses the use of timing advance (TA) to compensate for propagation delay, wherein the timing advance is computed by the network for the mobile station. At paragraph [0025], Chen disclose approximating a distance of a mobile station from a base station based on a difference between upper and lower bounds on a propagation delay. Claim 15 is thus patentably distinguished over Chen.

#### Discussion of Claim 20

Regarding Claim 20, Chen fails to disclose a

... method in a wireless communications device, the method comprising:

determining timing advance on the wireless communications device;

transmitting a modified burst to a network using the timing advance determined on the wireless communications device.

The various passages of Chen referenced by the Examiner do not support the asserted rejection of Claim 15. At paragraph [0024], Chen discloses the use of timing advance (TA) to compensate for propagation delay, wherein the timing advance is computed by the network for the mobile station. Thus Chen does not compute the TA on the same device that

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transmits a burst that is modified by the TA to the network. Claim 20 is thus patentably distinguished over Chen.

**Prayer For Relief**

In view of the amendments and the discussion above, the Claims of the present application are in condition for allowance. Kindly withdraw any rejections and objections and allow this application to issue as a United States Patent without further delay.

Respectfully submitted,

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